

We Claim:

1. A method of modulating differentiation of oligodendrocytes  
comprising reducing exposure of oligodendrocytes and precursors thereof to  
5 osteopontin.

2. The method of claim 1, wherein said reducing is obtained by exposing  
said oligodendrocytes and precursors thereof to an antibody that specifically binds  
osteopontin.  
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3. The method of claim 1, wherein said reducing is obtained by  
inactivating osteopontin receptor.

4. The method of claim 3, wherein said receptor is exposed to an  
15 osteopontin antagonist.

5. The method of claim 3, wherein said receptor is exposed to an  
antibody that binds to said receptor.

20 6. A method of modulating differentiation of oligodendrocytes  
comprising modulating the activity of a receptor for osteopontin on oligodendrocytes  
or precursors thereof.

7. A method of inducing remyelination at a site requiring remyelination comprising reducing exposure of oligodendrocyte and precursor cells thereof at said site to osteopontin to enhance oligodendrocyte precursor number at said site, and then increasing exposure of said precursor cells to osteopontin to enhance differentiation  
5 into oligodendrocytes, wherein said oligodendrocytes enhance remyelination.

8. The method of claim 7, wherein said reducing is obtained by using an antibody that specifically binds osteopontin.

10 9. The method of claim 7, wherein said reducing is obtained by inactivating osteopontin receptor.

10. The method of claim 7, further comprising exposing cells remote from said site to osteopontin, wherein osteopontin is a chemoattractant and causes  
15 migration of responsive cells to said site.

11. The method of claim 10, wherein said osteopontin is secreted by astrocytes.

20 12. The method of claim 10, wherein said osteopontin is expressed by cells exposed to an osteopontin agonist.

13. The method of claim 10, wherein said osteopontin is expressed by cells exposed to an antibody that binds to osteopontin receptor.

14. A method of obtaining a molecule that induces migration of cells to a site requiring myelination comprising:

exposing cells expressing an osteopontin receptor to candidate molecules;

5 identifying those candidate molecules that bind to said receptor;

exposing oligodendrocyte precursor cells to said identified candidate molecules; and

identifying those candidate molecules that induce migration of said precursor cells.

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15. The method of claim 14, wherein said molecule that induces migration is an osteopontin agonist or inverse agonist.

16. A method of obtaining a molecule that induces dedifferentiation of an oligodendrocyte or prevents differentiation of an oligodendrocyte precursor cell comprising:

exposing cells expressing an osteopontin receptor to candidate molecules;

identifying those candidate molecules that bind to said receptor;

20 exposing oligodendrocyte precursor cells to said identified candidate molecules; and

identifying those candidate molecules that prevent differentiation of said precursor cells into mature oligodendrocytes.

17. A method of obtaining a molecule that induces dedifferentiation of an oligodendrocyte or prevents differentiation of an oligodendrocyte precursor cell comprising:

- 5 exposing cells expressing an osteopontin receptor to candidate molecules;
- identifying those candidate molecules that bind to said receptor;
- exposing oligodendrocytes to said identified candidate molecules; and
- identifying those candidate molecules that induce dedifferentiation of said oligodendrocytes.

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